Abstract of the Disclosure

A method and system for tracking attitude of a device includes fixing a two-dimensional array of photosensors to the device and using the array to form a reference frame and a sample frame of images. The fields of view of the sample and reference frames largely overlap, so that there are common imaged features from frame to frame. Sample frames are correlated with the reference frame to detect differences in location of the common features. Based upon detection of correlations of features, an attitudinal signal indicative of pitch, yaw, and/or roll is generated. In the preferred embodiment, the attitudinal signal is used to manipulate a screen cursor of a display system, such as a remote interactive video system (RIVS). However, attitudinal tracking using the invention may be employed in other applications. Another aspect of the invention is that the two-dimensional array is configured to compensate for any curvilinear distortions introduced by a lens system for imaging the features within the field of view of the array.

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